fallonforge.sandia.gov

Naval Air Station Fallon Site

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

Working in partnership with the U.S. Department of Defense to reduce our Nation's dependency on fossil fuels and to safeguard U.S. military readiness

NAS FALLON

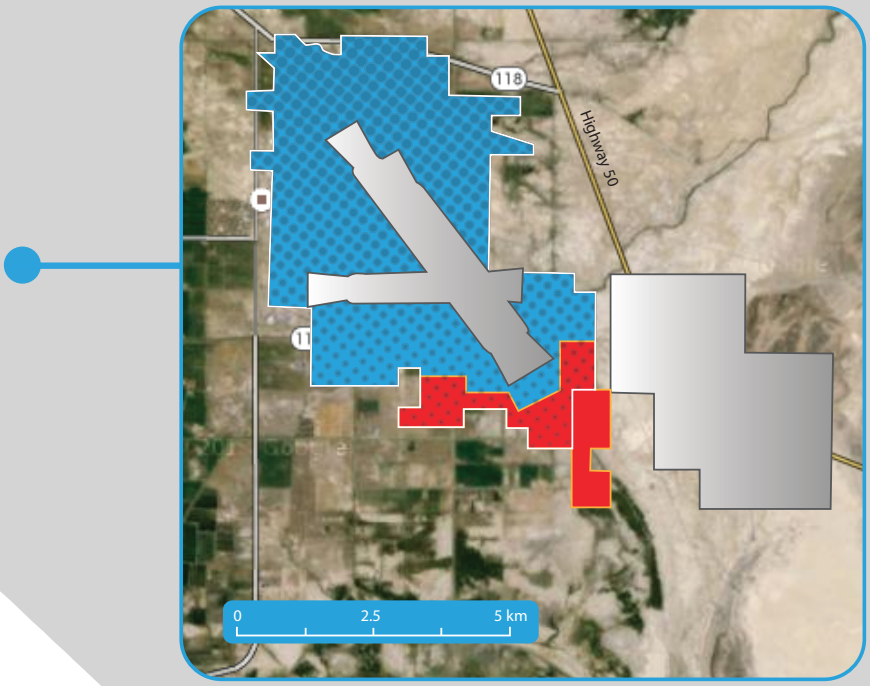
Geothermal Research Observatory

A DOE-funded field laboratory dedicated to furthering the study of Enhanced Geothermal Systems

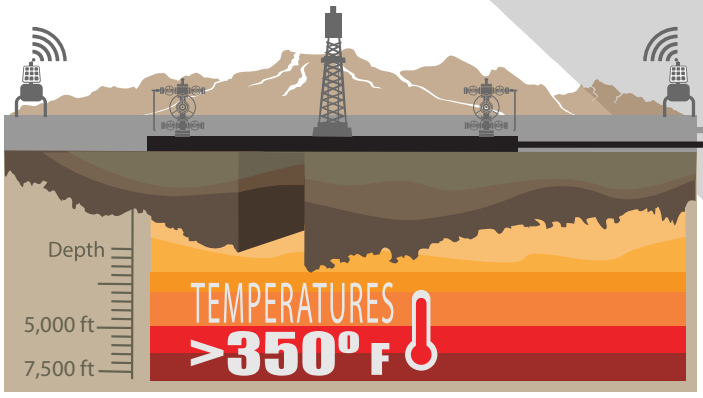
Nevada's Geothermal Power

GENERATES 600 MW

POTENTIAL 100,000 MW



NAS Fallon
Fallon FORGE
No Surface Occupancy



15.4 sq mi
monitoring and instrumentation

1.7 sq mi
full development, including 4 exploration wells

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NAS Fallon: A FORGE Phase 1 Awardee

FORGE U.S. Department of Energy

Dedicated to furthering the study of Enhanced Geothermal Systems

Enhanced geothermal systems (EGS) take advantage of earth's heat by the injection, circulation, and withdrawal of fluid to produce energy.

What is FORGE?

FORGE, the Frontier Observatory for Research in Geothermal Energy, is a U.S. Department of Energy initiative to establish a field laboratory dedicated to studying EGS. Engineers and scientists at the selected FORGE site will perform research and develop the data, technologies, and methods that will lead to EGS commercially viability.

Why is NAS Fallon, Nevada, an Outstanding Location?

The site at NAS Fallon successfully meets all FORGE selection criteria. The site is an excellent study area for EGS with temperature greater than 350º F at depths of about 5,000 ft. Over 15 square miles within and adjacent to the Naval Air Station Fallon (NASF) and Ormat lease area are available for site monitoring and instrumentation, including 1.7 square miles for full development. Data indicate suitable temperatures and rock structures at shallow depths, so reaching the target zone will cost significantly less than in greater depths. The Fallon FORGE Project Team is highly qualified and diverse with significant experience in EGS research and development. All this in a State with a proven potential for abundant geothermal energy.

EGS: Good for Nevada, Good for the Country

Geothermal energy is a clean, consistent, alternative source of power for the American energy consumer. But conventional geothermal systems work only where there is naturally occurring hot rock, underground fluid, and natural permeability.

EGS requires only one condition: high subsurface heat. Once a heat source is located, wells are drilled into the target zone. The underground rock is hydraulically stimulated—using techniques borrowed from the oil and gas industry—to create a permeable geothermal reservoir. Cold water, injected into the stimulated hot rock is heated and withdrawn as hot geothermal fluids. The resulting fluid is brought to the surface through a second well; its heat drives turbines to produce electricity.

Project Team

- Sandia National Laboratories, Project Lead. Extensive geoengineering experience applied to EGS development.
- Lawrence Berkeley National Laboratory. Unique capabilities in subsurface energy science and EGS expertise.
- University of Nevada–Reno. Geothermal and regional expertise and home of the Great Basin Center for Geothermal Energy, the Geothermal Academy, and the Nevada Bureau of Mines and Geology.
- U.S. Geological Survey, Menlo Park. The Nation's preeminent geoscience research organization.
- U.S. Navy and the U.S. Navy Geothermal Program Office. Actively managing geothermal exploration and development on military lands with experienced geothermal personnel at NASF.
- Ormat Nevada Inc. Premier binary geothermal power plant manufacturer, developer, and global provider of clean geothermal power.
- GeothermEx/Schlumberger. Consultants with over 40 years of geothermal resource development experience.
- Itasca Consulting Group. Global consulting and software developer with expertise in geomechanics, fracture modeling, and EGS simulations.

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